

REMARKS

Claims 1-65 are presently pending in this application. Claims 1, 12, 17, 22, 27, 39, and 48 have been amended. The status of the application in light of the Office Action mailed May 18, 2005, is as follows:

(A) Claims 1-9, 12-27, and 30-38 were rejected under 35 USC § 102(b) as being anticipated by US Patent No. 4,567,652 ("Gussman").

(B) Claims 39, 41, and 43-53 were rejected under 35 USC § 102(e) as being anticipated by US Patent Application Publication No. 2002/0016091 ("Perino").

(C) Claims 10, 11, 28, 29, 40, and 42 were held to be allowable if rewritten in independent form.

(D) Claims 54-65 were allowed.

A. Response to Section 102(b) Rejections

Claims 1-9, 12-27, and 30-38 were rejected under 35 USC § 102(b) as being anticipated by Gussman. As described below, the rejection of claims 1-9, 12-27, and 30-38 should be withdrawn because Gussman does not teach or suggest all of the features of these claims.

(1) Claim 1 is Directed Toward a Testing System With a Placement Head Configured So That the Packaged Device Can Pass Through the Placement Head

Amended claim 1 is directed at a testing system for testing a packaged microfeature device that has a profile and an array of electrical contacts. The system can include a socket carried by a circuit board, and the socket can have an array of leads configured to contact the array of contacts on the packaged device at a reference plane. The system can further include a package handling assembly having a placement head and an alignment element coupled to the placement head. The placement head can be moveable between a first position at which the alignment element is separated from the socket and a second position at which the alignment element is proximate to the array of leads of the socket. The placement head can be

configured so that the packaged device can pass through the placement head when the placement head is in the second position. The alignment element can have an alignment portion configured to guide lateral movement of the packaged device in the reference plane relative to the array of leads.

(2) Gussman Discloses an Apparatus With a Shoe Mechanism That Pushes Integrated Circuit (IC) Packages into Sockets

Gussman discloses an apparatus for loading IC packages into sockets on a burn-in board (col. 5, lines 5-14). The apparatus has a table 24 to which the burn-in board 26 is attached (col. 7, lines 15-20), and the burn-in board carries sockets 74 (col. 6, lines 44-47). As the apparatus moves the burn-in board, a sensor means 80 detects when a row of sockets is in position to receive IC packages 25 (col. 8, lines 17-27). An IC package travels down a track 150 of a loader channel 72 and is positioned on a loading finger 170 above the socket (col. 10, lines 31-42; col. 12, lines 34-41). The apparatus also has a loader head 66 supported by a support body 92 (col. 9, lines 1-14). The loader head has an air driven shoe mechanism 118 with a heel 139 and a toe 140 that are used to press the IC package into the socket (col. 9, lines 1-8; col. 9 line 39- col. 10, line 30). The loading finger flexes to accommodate the insertion process (col. 12, lines 64-65). The apparatus also has an alignment mechanism 102 that has straddle legs 142 that straddle the shoe mechanism and align the IC package relative to the socket before the shoe mechanism pushes the IC package into the socket (col. 10, lines 31-42).

(3) Gussman Fails to Teach or Suggest, Among Other Features, a Testing System With a Placement Head Configured So That the Packaged Device Can Pass Through the Placement Head

Gussman fails to teach or suggest the combination of elements set forth in claim 1. For example, Gussman fails to teach a placement head configured so that the packaged device can pass through the placement head as recited by claim 1. In Gussman, a loading finger supports an IC package and a shoe mechanism pushes the IC package into a socket. The finger flexes to allow the IC package to be inserted into the socket. The IC package in Gussman does not pass through a portion of the finger

or the shoe mechanism. Accordingly, Gussman fails to teach or suggest a placement head configured so that the packaged device can pass through the placement head, as recited by claim 1

Additionally, there is no motivation to modify Gussman so that the IC package passes through either the shoe mechanism or the loading finger. Because the IC package in Gussman slides from the track of the loader channel on to the loading finger, there is no need to pass the IC package through the loading finger or the shoe mechanism. Additionally, the shoe mechanism and loading finger need to be solidly constructed because the shoe mechanism presses the IC package into the socket and the loading finger supports the IC package during this insertion process. Accordingly, a person skilled in the art would not be motivated to modify Gussman so that the IC package passes through the shoe mechanism or the loading finger.

Claim 1 is allowable over the cited reference for at least the reasons explained above. Claims 2-9 depend from claim 1 and are allowable for at least this reason, and also because claims 2-9 include additional features. Amended independent claims 22 and 27 include, *inter alia*, features generally analogous to those included in claim 1. Claims 22 and 27, as well as dependent claims 23-26 and 28-38, are also in condition for allowance for at least the reasons explained above.

(4) Claim 12 is Directed Toward a Testing System Having a First Alignment Element That is Moveable With the Support Member as a Unit Relative to the First Socket to be Positioned in a Receiving Area of the First Socket

Amended claim 12 is directed toward a system for testing a plurality of packaged microfeature devices that have electrical contacts. The packaged devices can have at least one of a plurality of profiles. The system can include a plurality of sockets arranged in a socket array. The individual sockets can have an array of leads coupleable to the array of contacts on the packaged devices. At least one of the sockets can be a first socket that has a receiving area proximate to the array of leads and is configured to removably receive a respective packaged device independent of the package profile of the packaged device. The system can further include a package

handling assembly having a support member and a plurality of alignment elements carried by the support member. At least one of the alignment elements can be a first alignment element that is moveable with the support member as a unit relative to the first socket to be positioned in the receiving area of the first socket. The first alignment element can have portions configured to restrict movement of a packaged device in at least two dimensions relative to the first socket when the packaged device is positioned in the receiving area.

(5) Gussman Fails to Teach or Suggest, Among Other Features, a Testing System Having a First Alignment Element That is Moveable With the Support Member as a Unit Relative to the First Socket to be Positioned in a Receiving Area of the First Socket

Gussman fails to teach or suggest the combination of elements set forth in amended claim 12. For example, although the alignment mechanism in Gussman includes straddle legs that align the IC package with the socket before the shoe mechanism pushes the IC package into the socket, no portion of the alignment mechanism in Gussman is positioned in a receiving area of a socket. Gussman, moreover, also fails to disclose or suggest, an alignment mechanism that is moveable with a support member as a unit relative to a socket to be positioned in a receiving area of the socket. Accordingly, Gussman fails to teach or suggest a first alignment element that is moveable with a support member as a unit relative to a first socket to be positioned in the receiving area of the first socket.

Additionally, there is no motivation to modify the apparatus in Gussman so that a portion of the alignment mechanism is movable to be positioned in the receiving area of a socket. The apparatus in Gussman uses the sensor means to position the socket under the shoe mechanism and the alignment mechanism to position to the IC package over the socket on the loading finger relative to the socket. The load finger then supports the IC package relative to the shoe mechanism and socket until the shoe mechanism presses the IC package into place. There is no need to position a portion of the alignment mechanism in the socket receiving area. Accordingly, there is no

motivation to modify the apparatus in Gussman so that a portion of the alignment mechanism is movable to be positioned in the receiving area of a socket.

Claim 12 is accordingly allowable over the cited reference. Claims 13-16, which depend from claim 12, are also in condition for allowance for at least the reasons explained above and also because these claims include additional features.

(6) Claim 17 is Directed Toward a Testing System With an Alignment Element Having an Aperture Therethrough With Internal Tapered Bearing Surfaces Terminating at an Opening and Configured to Align the Array of Contacts of the Packaged Device With the Array of Leads in the Socket

Amended claim 17 is directed toward a testing system for testing a packaged microfeature device that has a profile and an array of contacts. The system can include a socket having an array of leads configured to contact the array of contacts on the packaged device at a reference plane. The system can further include a package handling assembly having a placement head and an alignment element coupled to the placement head. The placement head and alignment element can be moveable relative to the socket. The alignment element can have an aperture therethrough with internal tapered bearing surfaces terminating at an opening and configured to align the array of contacts of the packaged device with the array of leads in the socket.

(7) Gussman Fails to Teach or Suggest, Among Other Features, a Testing System With an Alignment Element Having an Aperture Therethrough With Internal Tapered Bearing Surfaces Terminating at an Opening and Configured to Align the Array of Contacts of the Packaged Device With the Array of Leads in the Socket

Gussman fails to teach or suggest the combination of elements set forth in claim 17. For example, although the alignment mechanism in Gussman includes straddle legs, the alignment mechanism does not include an aperture or an aperture with internal tapered bearing surfaces. Accordingly, Gussman fails to teach or suggest an alignment element having an aperture therethrough with internal tapered bearing surfaces terminating at an opening and configured to align the array of contacts of the packaged device with the array of leads in the socket, as recited by claim 17.

Additionally, there is no motivation to modify the alignment mechanism in Gussman so that the alignment mechanism has an aperture. The alignment mechanism in Gussman includes straddle legs that stop the IC package as it slides forward on the loading finger and aligns the IC package relative to the socket prior to the shoe mechanism pushing the IC package into the socket (col. 10, lines 31-42; col. 12, lines 48-59). If the straddle legs formed an aperture, they would interfere with the IC package being pressed into the socket because the straddle legs overlap a portion of the IC package when the IC package is positioned over the socket (col. 10, lines 31-42; col. 12, lines 48-59; Figures 5A and 8). This would destroy a purpose of the apparatus in Gussman. Accordingly, there is no motivation to modify the alignment mechanism in Gussman so that the alignment mechanism has an aperture.

Claim 17 is accordingly in condition for allowance. Claims 18-21 depend from claim 17, and for at least this reason claims 18-21 are also in condition for allowance.

B. Response to Section 102(e) Rejections

Claims 39, 41, and 43-53 were rejected under 35 USC § 102(e) as being anticipated by Perino. As described below, the rejection of claims 39, 41, and 43-53 should be withdrawn because Perino does not teach or suggest all of the features of these claims.

- (1) Claim 39 is Directed Toward a Surface Guide Positioned to Support at Least a Portion of One of the First and Second Packaged Devices Apart From the Array of Leads With the Array of Leads Being in Alignment With One of the First and Second Array of Contacts, Independent of the First and Second Package Profile

Amended claim 39 is directed at a packaged device testing system for testing first and second packaged devices. The first packaged device can have a first array of contacts and a first package profile. The second packaged device can have a second array of contacts substantially the same as the first array of contacts and a second package profile different than the first package profile. The system can include a socket that has an array of leads arranged to be electrically coupleable with the first and second array of contacts. The socket can have a receiving area adjacent to the array

of leads and can be configured to removably receive the first and second packaged devices. The system can further include a surface guide coupled to the socket. The surface guide can be positioned to support at least a portion of one of the first and second packaged devices apart from the array of leads with the array of leads being in alignment with one of the first and second array of contacts, independent of the first and second package profile.

(2) Perino Discloses a Chip Socket Assembly With a Slot for Mechanically and Electrically Coupling a Chip With a Specific Profile to a Circuit Board

Perino discloses a chip socket assembly 400 that mechanically and electrically couples a chip 440 to a bus of a circuit board 502 (para. 73). The assembly has a base 410 that couples to the circuit board over pads of a bus to which the chip 440 can be electrically coupled (para. 84). The base 410 defines a slot 420 configured to receive and guide the chip (para. 75). The chip is received at the top 411 of the slot and guided to the bottom 412 of the slot where the leads 442 of the chip connect to the bus (para. 77 and 84; Figure 4-6). Additionally, the slot can have left and right support pin guides that receive and guide left and right support pins of the chip, as the chip is lowered into the slot (para. 78; Figure 4). A clip 430 can be placed over a portion of the chip and connected to the slot to retain the chip in place (para. 80; Figure 4).

(3) Perino Fails to Teach or Suggest, Among Other Features, a Surface Guide Positioned to Support at Least a Portion of One of the First and Second Packaged Devices Apart From the Array of Leads With the Array of Leads Being in Alignment With One of the First and Second Array of Contacts, Independent of the First and Second Package Profile

Perino fails to teach or suggest the combination of elements set forth in amended claim 39. For example, the ability of the slot to receive and hold the chip in Perino is fully dependent on the profile of the chip. If the chip is not properly configured to be received by the slot, the chip socket assembly cannot properly engage the chip and connect the chip to the circuit board. Accordingly, Perino does not teach or suggest a surface guide positioned to support at least a portion of one of the first and

second packaged devices apart from the array of leads with the array of leads being in alignment with one of the first and second array of contacts, independent of the first and second package profile, as recited by claim 39.

Additionally, there is no motivation to modify the chip socket assembly in Perino to receive and retain chips independent of the profile of the chip. A purpose of Perino is to mechanically and electrically couple chips to circuit boards for extended use (para. 95). Therefore, it is desirable to receive and support a peripheral portion of the chips when mechanically coupling the chip to the circuit board. It is therefore necessary for the chip to be configured to match at least a portion of the profile of the chip. Accordingly, there is no motivation to modify the chip socket assembly in Perino to receive and retain chips independent of the profile of the chip.

Therefore, for at least the reasons discussed above, claim 39 is in condition for allowance. Claims 40-47 depend from claim 39 and for at least this reason, claims 40-47 are also in condition for allowance. Amended Independent claim 48 includes, *inter alia*, features generally similar to those included in claim 39. Accordingly, for at least this reason, claim 48 and claims 49-53 which depend from claim 48, are also in condition for allowance.

C. Allowable Subject Matter

The undersigned thanks the Examiner for holding claims 10, 11, 28, 29, 40, and 42 as being allowable if rewritten in independent form. Although the undersigned agrees with the Examiner's conclusion that these claims are allowable, the undersigned notes that the claims may be allowable for reasons other than those identified by the Examiner and does not concede that the Examiner's characterization of the terms of the claims and the prior art are correct. Additionally, claims 10 and 11 depend from claim 1, claims 28 and 29 depend from claim 27, and claims 40 and 42 depend from claim 39. As discussed above, claims 1, 27, and 39 are in condition for allowance. Accordingly, for at least this reason, claims 10, 11, 28, 29, 40, and 42 are in condition for allowance without being rewritten in independent form.

D. Allowed Claims

The undersigned thanks the Examiner for allowing claims 54-65. Although the undersigned agrees with the Examiner's conclusion that these claims are allowable, the undersigned notes that the claims may be allowable for reasons other than those identified by the Examiner and does not concede that the Examiner's characterization of the terms of the claims and the prior art are correct.

In view of the foregoing, the pending claims comply with 35 U.S.C. § 112 and are patentable over the applied art. The applicant accordingly requests reconsideration of the application and a Notice of Allowance. If the Examiner has any questions or believes a telephone conference would expedite prosecution of this application, the Examiner is encouraged to call the undersigned at (206) 359-6477.

A separate petition for a one-month extension of time accompanies this amendment along with the associated fee. No other fees are believed due with this communication. However, the Commissioner is hereby authorized and requested to charge any deficiency in fees herein to Deposit Account No. 50-0665.

Respectfully submitted,
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